AMENDMENT TO THE CLAIMS

The following listing of claims should be entered to replace all prior listings of claims in the application. In accordance with Rule 121, the status of each claim is indicated parenthetically. As can be seen, in this listing, claims 83, 85, 97 and 99-101 have been amended and claims 111-137 have been added. Fees in the amount of $766.00 are included for the additional claims as follows:

Added claims:	33@ $18.00 =	$ 594.00
Added Independent Claims:	2 @ $86.00 =	$ 172.00
Total Fee paid:		$ 766.00

Listing of Claims:

Claims 1-82. (Canceled)

Claim 83. (Currently amended):

A system for creating a droplet from a jet of a flow cytometer comprising:

a nozzle body having an inner surface;

a nozzle tip having an inner surface, wherein said nozzle body and said nozzle tip establish a nozzle volume and wherein said inner surfaces of said nozzle body and said nozzle tip are substantially continuous;

a seal located off of said inner surface of said nozzle tip so that said seal does not substantially adversely impact laminar flow within said nozzle volume, and to which both said nozzle body and said nozzle tip are responsive;

a sheath fluid port located within said nozzle volume wherein said sheath fluid port introduces a sheath fluid;

a substance introduction port located within said nozzle volume; and

a free fall area below said nozzle tip and within which said droplet forms.

Claim 84. (original):

A system for creating a droplet from a jet of a flow cytometer as described in claim 83 wherein said nozzle tip has an outer surface and wherein said seal contacts said outer surface of said nozzle tip.

Claim 85. (currently amended):

A system for creating a droplet from a jet of a flow cytometer as described in claim 83 or 84 ~~wherein said nozzle body has an inner surface~~ and further comprising an edge insert on said inner surface of said nozzle body.

Claim 86. (previously presented):

A system for creating a droplet from a jet of a flow cytometer as described in claim 83, wherein said nozzle tip is sealingly attached to said nozzle body.

Claim 87. (previously presented):

A system for creating a droplet from a jet of a flow cytometer as described in claim 83, further comprising:

an oscillator to which said sheath fluid is responsive;

a substantially isolated unidirectional coupling which couples said oscillator to said nozzle volume through use of a directional isolator situated between said nozzle body and said oscillator wherein said coupling permits said oscillation to create oscillation in substantially one direction; and

an alternating voltage source having an alternating voltage amplitude of less than one hundred millivolts connected to said oscillator.

Claim 88. (previously presented):

A system for creating a droplet from a jet of a flow cytometer as described in claim 83, further comprising:

a substantially isolated unidirectional coupling which couples an oscillator to said nozzle volume through use of a directional isolator situated between said nozzle body and said

oscillator wherein said coupling permits said oscillation to create oscillation in substantially one direction; and

an oscillator to which said substantially isolated unidirectional coupler and said nozzle volume are responsive.

Claim 89. (previously presented):

A system for creating a droplet from a jet of a flow cytometer as described in claim 83, further comprising:

an oscillator to which said sheath fluid is responsive; and

a unidirectional coupling which couples said oscillator to said sheath fluid.

Claim 90. (previously presented):

A system for creating a droplet from a jet of a flow cytometer as described in claim 83, 86 or 87, wherein said nozzle body and said nozzle tip are continuously converging.

Claim 91. (previously presented):

A system for creating a droplet from a jet of a flow cytometer as described in claim 90, further comprising a tip joint of said inner surfaces of said nozzle body and said nozzle tip.

Claim 92. (previously presented):

A system for creating a droplet from a jet of a flow cytometer as described in claim 83, further comprising a flow convergence zone within said nozzle volume, wherein said substance introduction port is located within said flow convergence zone.

Claim 93. (previously presented):

A system for creating a droplet from a jet of a flow cytometer as described in claim 92, further comprising a location adjuster to which said substance introduction port is responsive.

Claim 94. (previously presented):

A system for creating a droplet from a jet of a flow cytometer as described in claim 83, further comprising:

an oscillator to which said sheath fluid is responsive; and

an alternating voltage source having an alternating voltage amplitude of less than one hundred millivolts connected to said oscillator.

Claim 95. (previously presented):

A system for creating a droplet from a jet of a flow cytometer as described in claim 83, further comprising an oscillator to which said nozzle volume is responsive.

Claim 96. (previously presented):

A system for creating a droplet from a jet of a flow cytometer as described in claim 95, further comprising a unidirectional coupling which couples said oscillator to said sheath fluid.

Claim 97. (withdrawn-currently amended):

~~A method of creating a droplet from a jet of a flow cytometer, comprising the steps of:~~

~~establishing a nozzle volume of a nozzle body and a nozzle tip, said nozzle body and said nozzle tip each having an inner surface;~~

~~sealing said nozzle volume off of said inner surface of said nozzle tip so as to not substantially adversely impact laminar flow within said nozzle volume;~~

~~flowing sheath and substance fluid through said nozzle volume; and~~

~~forming at least one droplet in a free fall area below said nozzle tip.~~

A method of creating a droplet from a jet of a flow cytometer comprising the steps of:

providing a nozzle body having an inner surface;

providing a nozzle tip having an inner surface, wherein said nozzle body and said nozzle tip establish a nozzle volume and wherein said inner surfaces of said nozzle body and said nozzle tip are substantially continuous;

providing a seal located off of said inner surface of said nozzle tip and to which both said nozzle body and said nozzle tip are responsive;

providing a sheath fluid port located within said nozzle volume wherein said sheath fluid port introduces a sheath fluid;

providing a substance introduction port located within said nozzle volume;

providing a free fall area below said nozzle tip and within which said droplet forms; and

flowing said sheath fluid through said nozzle volume.

Claim 98. (canceled)

Claim 99. (withdrawn-currently amended):

A method of creating a droplet from a jet of a flow cytometer as described in claim 97, wherein said step of ~~sealing said nozzle volume off of said inner surface of said nozzle tip comprises sealing said nozzle volume at an outer surface of said nozzle tip~~ providing said nozzle tip comprises the step of providing a nozzle tip having an outer surface and wherein said step of providing said seal comprises the step of providing said seal contacting said outer surface of said nozzle tip.

Claim 100. (withdrawn-currently amended):

A method of creating a droplet from a jet of a flow cytometer as described in claim 99, ~~wherein said step of sealing said nozzle volume off of said inner surface of said nozzle tip further comprises sealingly attaching said nozzle tip to said nozzle body at an edge insert of~~ and further comprising the step of providing an edge insert on said inner surface of said nozzle body.

Claim 101. (withdrawn-currently amended):

A method of creating a droplet from a jet of a flow cytometer as described in claim 97, wherein said step of ~~sealing said nozzle volume off of said inner surface of~~ providing said nozzle tip comprises the step of providing said nozzle tip ~~sealingly attaching said nozzle tip~~ sealingly attached to said nozzle body ~~at an edge insert of said inner surface of said nozzle body~~.

Claim 102. (withdrawn):

A method of creating a droplet from a jet of a flow cytometer as described in claim 97, further comprising the steps of:

establishing a substantially isolated unidirectional coupling with said nozzle volume which couples an oscillator to said nozzle volume through use of a directional isolator situated between said nozzle body and said oscillator; and

creating a substantially isolated unidirectional oscillation within said nozzle volume using an alternating voltage with an amplitude of less than one hundred millivolts for said oscillator.

Claim 103. (withdrawn):

A method of creating a droplet from a jet of a flow cytometer as described in claim 97, further comprising the step of initiating a substantially unidirectional oscillation through use of a directional isolator situated between said nozzle body and an oscillator wherein said substantially unidirectional oscillation occurs within said nozzle volume.

Claim 104. (withdrawn):

A method of creating a droplet from a jet of a flow cytometer as described in claim 97, further comprising the step of unidirectionally applying an oscillation to said sheath fluid.

Claim 105. (withdrawn):

A method of creating a droplet from a jet of a flow cytometer as described in claim 97 or 102, further comprising the step of continuously converging said sheath fluid.

Claim 106. (withdrawn):

A method of creating a droplet from a jet of a flow cytometer as described in claim 97, further comprising the step of converging said sheath fluid in a convergence zone, and wherein said step of introducing a flow of a substance at a location within said sheath fluid comprises introducing said flow of a substance in said convergence zone.

Claim 107. (withdrawn):

A method of creating a droplet from a jet of a flow cytometer as described in claim 106, further comprising the step of adjusting the location at which said substance is introduced within said convergence zone.

Claim 108. (withdrawn):

A method of creating a droplet from a jet of a flow cytometer as described in claim 97, further comprising the steps of:

establishing an oscillator coupled to said nozzle volume; and

applying an alternating voltage with an amplitude less than one hundred millivolts to said oscillator.

Claim 109. (withdrawn):

A method of creating a droplet from a jet of a flow cytometer as described in claim 97, further comprising the step of initiating an oscillation within said nozzle volume.

Claim 110. (withdrawn):

A method of creating a droplet from a jet of a flow cytometer as described in claim 97, further comprising the step of unidirectionally applying an oscillation to said sheath fluid.

Claim 111. (new):

A system for creating a droplet from a jet of a flow cytometer comprising:

a nozzle body having an inner surface;

a continuously converging nozzle tip having an inner surface, wherein said nozzle body and said nozzle tip establish a nozzle volume;

a seal located off of said inner surface of said nozzle tip and to which both said nozzle body and said nozzle tip are responsive;

a sheath fluid port located within said nozzle volume wherein said sheath fluid port introduces a sheath fluid;

a substance introduction port located within said nozzle volume; and

a free fall area below said nozzle tip and within which said droplet forms.

Claim 112. (New):

A system for creating a droplet from a jet of a flow cytometer as described in claim 111 wherein said nozzle tip has an outer surface and wherein said seal contacts said outer surface of said nozzle tip.

Claim 113. (New):

A system for creating a droplet from a jet of a flow cytometer as described in claim 111 or 112 and further comprising an edge insert on said inner surface of said nozzle body.

Claim 114. (new):

A system for creating a droplet from a jet of a flow cytometer as described in claim 111, wherein said nozzle tip is sealingly attached to said nozzle body.

Claim 115 (new):

A system for creating a droplet from a jet of a flow cytometer as described in claim 111, further comprising:

an oscillator to which said sheath fluid is responsive;

a substantially isolated unidirectional coupling which couples said oscillator to said nozzle volume through use of a directional isolator situated between said nozzle body and said oscillator wherein said coupling permits said oscillation to create oscillation in substantially one direction; and

an alternating voltage source having an alternating voltage amplitude of less than one hundred millivolts connected to said oscillator.

Claim 116 (new):

A system for creating a droplet from a jet of a flow cytometer as described in claim 111, further comprising:

a substantially isolated unidirectional coupling which couples an oscillator to said nozzle volume through use of a directional isolator situated between said nozzle body and said

oscillator wherein said coupling permits said oscillation to create oscillation in substantially one direction; and

an oscillator to which said substantially isolated unidirectional coupler and said nozzle volume are responsive.

Claim 117 (new):

A system for creating a droplet from a jet of a flow cytometer as described in claim 111, further comprising:

an oscillator to which said sheath fluid is responsive; and

a unidirectional coupling which couples said oscillator to said sheath fluid.

Claim 118 (new):

A system for creating a droplet from a jet of a flow cytometer as described in claim 111, 114 or 115, wherein said nozzle body and said nozzle tip are continuously converging.

Claim 119 (new):

A system for creating a droplet from a jet of a flow cytometer as described in claim 118, further comprising a tip joint of said inner surfaces of said nozzle body and said nozzle tip.

Claim 120 (new):

A system for creating a droplet from a jet of a flow cytometer as described in claim 111, further comprising a flow convergence zone within said nozzle volume, wherein said substance introduction port is located within said flow convergence zone.

Claim 121 (new):

A system for creating a droplet from a jet of a flow cytometer as described in claim 120, further comprising a location adjuster to which said substance introduction port is responsive.

Claim 122 (new):

A system for creating a droplet from a jet of a flow cytometer as described in claim 111, further comprising:

an oscillator to which said sheath fluid is responsive; and

an alternating voltage source having an alternating voltage amplitude of less than one hundred millivolts connected to said oscillator.

Claim 123 (new):

A system for creating a droplet from a jet of a flow cytometer as described in claim 111, further comprising an oscillator to which said nozzle volume is responsive.

Claim 124 (new):

A system for creating a droplet from a jet of a flow cytometer as described in claim 123, further comprising a unidirectional coupling which couples said oscillator to said sheath fluid.

Claim 125 (new):

A method of creating a droplet from a jet of a flow cytometer comprising the steps of:

providing a nozzle body having an inner surface;

providing a continuously converging nozzle tip having an inner surface, wherein said nozzle body and said nozzle tip establish a nozzle volume;

providing a seal located off of said inner surface of said nozzle tip and to which both said nozzle body and said nozzle tip are responsive;

providing a sheath fluid port located within said nozzle volume wherein said sheath fluid port introduces a sheath fluid;

providing a substance introduction port located within said nozzle volume;

providing a free fall area below said nozzle tip and within which said droplet forms; and

flowing said sheath fluid through said nozzle volume.

Claim 126. (new):

A method of creating a droplet from a jet of a flow cytometer as described in claim 125, wherein said step of providing said nozzle tip comprises the step of providing a nozzle tip having an outer surface and wherein said step of providing said seal comprises the step of providing said seal contacting said outer surface of said nozzle tip.

Claim 127. (new):

A method of creating a droplet from a jet of a flow cytometer as described in claim 126, and further comprising the step of providing an edge insert on said inner surface of said nozzle body.

Claim 128. (new):

A method of creating a droplet from a jet of a flow cytometer as described in claim 125, wherein said step of providing said nozzle tip comprises the step of providing said nozzle tip sealingly attached to said nozzle body.

Claim 129. (new):

A method of creating a droplet from a jet of a flow cytometer as described in claim 125, further comprising the steps of:

establishing a substantially isolated unidirectional coupling with said nozzle volume which couples an oscillator to said nozzle volume through use of a directional isolator situated between said nozzle body and said oscillator; and

creating a substantially isolated unidirectional oscillation within said nozzle volume using an alternating voltage with an amplitude of less than one hundred millivolts for said oscillator.

Claim 130. (new):

A method of creating a droplet from a jet of a flow cytometer as described in claim 125, further comprising the step of initiating a substantially unidirectional oscillation through use of a directional isolator situated between said nozzle body and an oscillator wherein said substantially unidirectional oscillation occurs within said nozzle volume.

Claim 131. (new):

A method of creating a droplet from a jet of a flow cytometer as described in claim 125, further comprising the step of unidirectionally applying an oscillation to said sheath fluid.

Claim 132. (new):

A method of creating a droplet from a jet of a flow cytometer as described in claim 125 or 129, further comprising the step of continuously converging said sheath fluid.

Claim 133. (new):

A method of creating a droplet from a jet of a flow cytometer as described in claim 125, further comprising the step of converging said sheath fluid in a convergence zone, and wherein said step of introducing a flow of a substance at a location within said sheath fluid comprises introducing said flow of a substance in said convergence zone.

Claim 134. (new):

A method of creating a droplet from a jet of a flow cytometer as described in claim 133, further comprising the step of adjusting the location at which said substance is introduced within said convergence zone.

Claim 135. (new):

A method of creating a droplet from a jet of a flow cytometer as described in claim 125, further comprising the steps of:

establishing an oscillator coupled to said nozzle volume; and

applying an alternating voltage with an amplitude less than one hundred millivolts to said oscillator.

Claim 136. (new):

A method for creating a droplet from a jet of a flow cytometer as described in claim 125, further comprising the step of initiating an oscillation within said nozzle volume.

Claim 137. (new):

A method for creating a droplet from a jet of a flow cytometer as described in claim 125, further comprising the step of unidirectionally applying an oscillation to said sheath fluid.